

33. Descriptions of the Adult, Larval, and Pupal Stages of
a New Mosquito from Lord Howe Island, S. Pacific.
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(Text-figures 1-3.)

The material from which the following descriptions were drawn up was collected by Mr. R. Douglas Laurie, M.A., of the Zoological Department, University College, Aberystwyth, in Lord Howe Island during the summer of 1914. The adult mosquitoes, a male and a female, were reared by him from larvæ and pupæ found in a hole containing water in a fallen tree. The second species, to which mere reference is made, was taken on the wing in a dwelling-house at night.

OCHILEROTATUS LAUREI, sp. n.

A medium-sized, reddish-brown, mosquito with golden-coloured lines on the thorax, and the dorsal surface of the abdomen uniformly dark brown. Proboscis and legs blackish, some or all of the tarsal segments with small pale bands. Male palpi relatively short, scarcely more than half the length of the proboscis.

Head: Integument blackish, the occipital region clothed mainly with narrow, curved, and upright forked scales, but with small areas of creamy-white flat scales laterally; curved scales black and golden, the latter forming a median line, which broadens posteriorly, and a border (composed of a single row of scales) round the eyes; upright scales long and thin, black anteriorly and medially, dark yellowish-brown posteriorly and laterally. Eyes black. Antennæ dark brown, each with the basal segment and base of the second segment yellowish-brown. Proboscis straight, long and slender, black; labellæ small, pointed, testaceous. Palpi black; in the female very short, each with two narrow white rings and a white apex; in the male slender, about half the length of the proboscis, each with a narrow white band at the bases of the four segments, terminal segment about two-thirds the length of the penultimate, no distinct hair-tufts present. Clypeus black, pruinose. *Thorax*: Integument reddish-brown, clothed with dark brown and golden, narrow, curved scales; the golden scales are arranged in a definite manner as follows:—a narrow border round the anterior edge, two small more or less circular shoulder-spots, a median line broad anteriorly and gradually tapering to a point near the middle of the scutum, two

* Communicated by R. D. LAURIE, F.Z.S.

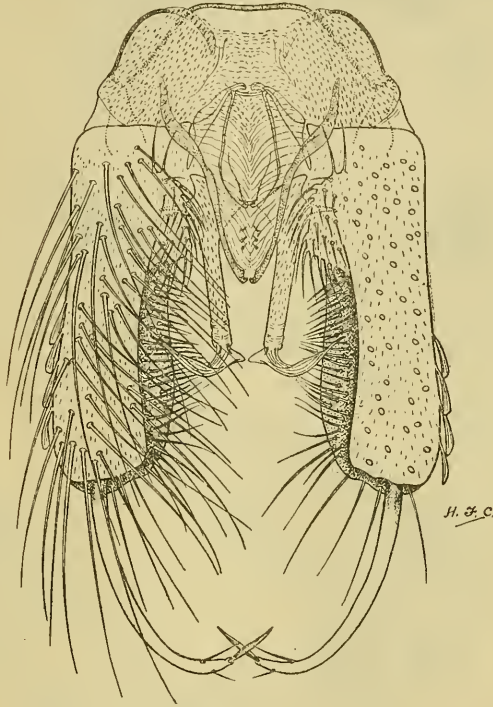
narrow dorso-lateral lines extending parallel from the scutellum to a spot slightly beyond the centre of the scutum, then becoming somewhat broader and curving outwards to meet the edge of the scutum about the anterior third, two very short admedian lines immediately before the bare space in front of the scutellum, and lastly, a few scattered scales laterally over the roots of the wings. Prothoracic lobes dark brown, conical, widely separated dorsally, with black bristles anteriorly, and intermingled, curved, golden, and creamy flat scales centrally and posteriorly. Scutellum lighter in colour than the scutum, with sparsely arranged golden, curved scales; border bristles black. Pleuræ dark brown with patches of creamy-white flat scales. *Abdomen*: Integument dark brown. Dorsal surface in the female covered with dark, almost black, flat scales; in the male similar, but with traces of pale lateral basal spots (each formed of a few cream-coloured scales) on the 5th, 6th, and 7th segments; ventral surface in both sexes dark brown, with a pair of large creamy-white lateral basal spots on each segment. Terminal segment of female paler brown, with moderately long cerci. *Wings*: Veins rather densely clothed with dark brown scales, the lateral scales somewhat broadly linear. Fork cells with their bases almost level, the first cell long and narrow, about three times as long as the petiole, the second wider, about twice as long as the petiole; posterior cross-vein about one and one-half times its own length distant from the median cross-vein. *Legs*: Dark brown, blackish. Fore and middle femora each with a narrow line of cream-coloured scales on the ventral surface, basal half of each hind femur broadly cream-coloured, apices of femora with small, yellowish spots. Tibiæ with inconspicuous yellowish knee-spots. First and second tarsal segments of the fore and middle legs with incomplete narrow, basal, whitish bands, tarsal segments of hind legs with basal, white bands. Ungues of female all equal and uniserrate; of fore and middle legs of male unequal and uniserrate, of hind legs of male small, equal, and uniserrate.

Length: Female approximately 5.5 mm., male 5.0 mm.; length of wings of female 5.2 mm., length of wing of male 4.5 mm.

Male Hypopygium (text-fig. 1).—Side-pieces long and narrow— from three to four times as long as the width at the extreme base,—with prominent basal and apical lobes. Dorsal surface of side-piece moderately hairy, the hairs relatively short towards the base, longer apically and laterally; ventral surface with numerous, long, curved hairs; outer margins with a few scales. Basal lobes subquadrate, bearing numerous strong, short hairs; apical lobes large, extending backwards to the basal lobes, with densely arranged, short, inwardly projecting hairs. Terminal clasp-segment slender, comparatively weak, with a long terminal spine and two short delicate hairs slightly before the apex. Tenth sternites (harpes) slender, strongly chitinised, slightly recurved at the tips; connecting membrane with three small spines on each

side towards the apex. Claspettes (harpagones) large, rather more than half the length of the side-pieces, each with a conspicuous, attenuated, membranous foot-like appendage. Aedeagus (unci) separate distally, without serrations or teeth.

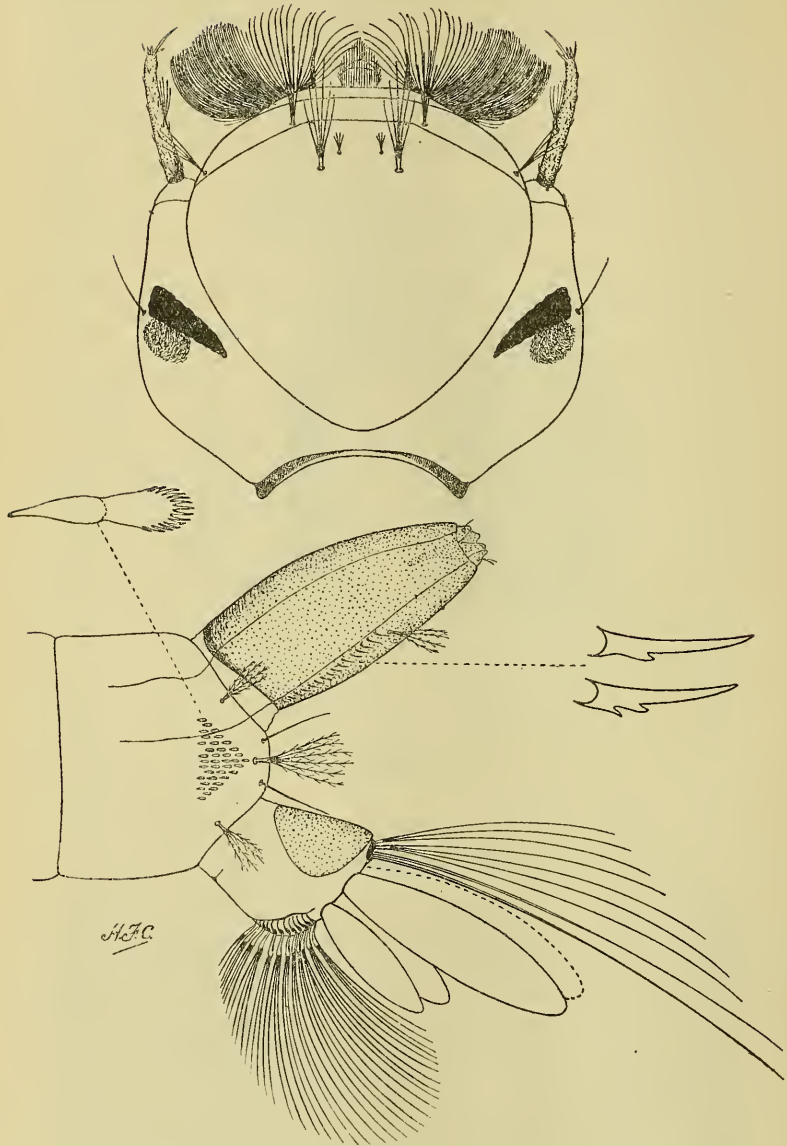
Text-figure 1.

Male hypopygium of *Ochlerotatus laurei*, sp. n. $\times 120$.

(Hairs of portion of right side-piece omitted.)

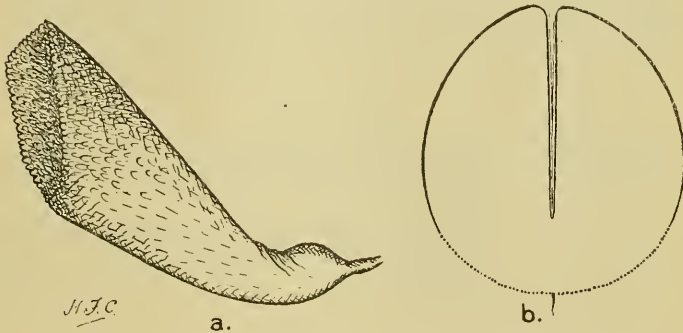
Larva (text-fig. 2).—Relatively stout, about 7 mm. in length. Head rounded, slightly narrowed before the eyes; antennæ cylindrical, sparsely covered with minute spines and bearing four or five longer spines at the apex; antennal tuft small, centrally situated, composed of four simple hairs arising from a common stem. Dorsal hairs not feathered, compound, the anterior pair each composed of four hairs, the small median of four and the posterior of five or six; ante-antennal tuft formed of four to six hairs. Mental plate triangular in shape, armed with from 12-14 teeth on each side; the terminal tooth longer and broader than the rest, the apical lateral teeth elongate and somewhat crowded

Text-figure 2.

Head and anal extremity of larva of *Ochlerotatus laurei*, sp. n.

together, the posterior lateral teeth broader (almost triangular near the base) and more widely separate, the last tooth small and remote. Thorax wider than long, hairs moderate, feathered, the stouter, multiple ones each consisting of from 8-10 hairs. Abdomen somewhat stout. Eighth abdominal segment as shown in text-fig. 2, the lateral comb composed of about fifty slightly chitinised scales arranged to form a triangular area; each comb-scale is somewhat elongate and is armed apically with a fringe of spinules. Air-tube about twice as long as broad; pecten composed of some 16 evenly spaced teeth—each pointed and with one or two lateral projections,—the most distal tooth situated about half-way along the tube. Hair-tuft of the air-tube arising immediately beyond the last spine of the pecten and composed of four or five feathered hairs. Anal segment as long as its greatest width, the chitinous plate rather small, not completely encircling the segment; upper pair of papillæ large, about twice the length of the anal segment, lower pair smaller, scarcely exceeding the length of the segment. Dorsal hairs four in number, the upper pair compound composed of 3-4 hairs each, the lower pair longer and apparently single; ventral brush well developed, composed of 14 or 15 compound hairs.

Text-figure 3.



a. Air-trumpet ($\times 80$), and b. Paddle ($\times 45$) of pupa of *Ochlerotatus laurei*, sp. n.

Pupa: Anterior region (cephalo-thoracic mass) elongate, subpyriform, compressed ventrally and posteriorly; respiratory trumpets (text-fig. 3 a) conical, their apices obliquely truncate. Abdomen relatively stout with weak hairs; dorsal, admedian, pair of multiple hairs of the first segment each composed of about ten short, branched, hairs; second segment with a pair of smaller and less complex multiple, admedian, lateral hairs, and also a pair of longer, single or double, dorso-hairs. Remaining segments with similar dorso-lateral hairs, the seventh and eighth segments,

in addition, with a short compound hair (that on the eighth segment formed of 10–12 simple hairs) arising from each of the dorso-antero-lateral angles. Paddles (text-fig. 3 *b*) large, ovoid, each with a short terminal hair.

Mr. Laurie supplied the following data regarding this mosquito:—"Mosquito larvæ and pupæ from a hollow in a fallen tree-trunk. Sea-level. The hollow was about 12 ins. \times 4 ins. and 4 ins. deep, and contained water. The larvæ and pupæ were removed and kept in captivity (7. 14), and two adults emerged (a male on 18. 7. 14 and a female on 21. 7. 14) before we left the Island."

This species, which I have much pleasure in dedicating to its collector, is a member of the genus *Ochlerotatus* in the most restricted sense; it resembles *O. eatoni* Edw. from the Madeira Is., in regard to the length of the male palpi. In general facies it somewhat resembles *O. japonicus* Theo., and apparently is related to the Asiatic group of species formed by the last-named mosquito, *O. macfarlanei* Edw., *O. pulcriventer* Giles, *O. oreophilus* Edw., etc.

Five examples of a second and probably undescribed species of *Ochlerotatus* were also captured by Mr. Laurie in a dwelling-house on the island. This species is dull brown in colour, and, with the exception of yellowish lateral abdominal spots, is devoid of ornamentation. Unfortunately, the specimens obtained were all females, and therefore until more material is available it is advisable to refrain from attempting an exact diagnosis.

References.

- EDWARDS, F. W.—"Eight new Mosquitoes in the British Museum Collection." Bull. Ent. Res. vi. p. 357 (1915–1916).
"Notes on Culicidæ, with descriptions of new Species." Bull. Ent. Res. vii. p. 201 (1916–1917).

Liverpool, July 1917.